VISUAL GESTURES

PRIORITY APPLICATION

[0001] This application is a continuation of U.S. patent application Ser. No. 13/840,268, filed Mar. 15, 2013, the disclosure of which is incorporated herein in its entirety by reference.

TECHNICAL FIELD

[0002] The subject matter disclosed herein generally relates to the processing of data. Specifically, the present disclosure addresses systems and methods for visual gestures.

BACKGROUND

[0003] User interfaces on mobile devices with touchscreen often require the use of tapping, swiping, or otherwise to activate features in applications. Some applications on mobile devices typically require the user to interact with the touchscreen with the user's fingers or stylus to provide input to the applications. When viewing content on a mobile device while holding the mobile device with both hands such as when taking a picture, the user is required to remove one hand from the mobile device to activate a command such as by tapping a shutter button on an application.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] Some embodiments are illustrated by way of example and not limitation in the figures of the accompanying drawings.

[0005] FIG. 1 is a device suitable for enabling selection of content based on visual gestures on the device, according to some example embodiments.

[0006] FIG. 2 is a block diagram illustrating modules (e.g., components) of a visualization application in the device, according to some example embodiments.

[0007] FIG. 3 is a block diagram illustrating modules (e.g., components) of a focus area detector of the visualization application, according to some example embodiments.

[0008] FIG. 4 is a block diagram illustrating modules (e.g., components) of a state modifier of the visualization application, according to some example embodiments.

[0009] FIG. 5 is a block diagram illustrating an example of a visualization of a virtual object in the device recognizing a physical object, according to some example embodiments

[0010] FIG. 6A is a block diagram illustrating an example of a visual gesture to focus on a feature of the virtual object in the device, according to some example embodiments.

[0011] FIG. 6B is a block diagram illustrating another example of a visual gesture to focus on a feature of the virtual object in the device, according to some example embodiments.

[0012] FIG. 6C is a block diagram illustrating an example of a visual gesture to enable an action on a pre-identified area on an image of a physical object, according to some example embodiments.

[0013] FIG. 7 is a block diagram illustrating an example of a visual gesture to trigger a change in a state of a feature of the virtual object in the device, according to some example embodiments.

[0014] FIG. 8 is a block diagram illustrating an example of a visual gesture to focus on a feature of the virtual object in the device, according to some example embodiments.

[0015] FIG. 9 is a block diagram illustrating an example of a visual gesture to trigger a change in a state of a feature of the virtual object in the device, according to some example embodiments.

[0016] FIG. 10A is a flowchart illustrating an example operation of the visualization application of a device in performing a method to enable a visual gesture on the device, according to some example embodiments.

[0017] FIG. 10B is a flowchart illustrating an example operation of the visualization application of a device in performing a method to enable a visual gesture on the device, according to some example embodiments.

[0018] FIG. 11 is a block diagram illustrating components of a machine, according to some example embodiments, able to read instructions from a machine-readable medium and perform any one or more of the methodologies discussed herein.

DETAILED DESCRIPTION

[0019] Example methods and systems are directed to visual gestures. Examples merely typify possible variations. Unless explicitly stated otherwise, components and functions are optional and may be combined or subdivided, and operations may vary in sequence or be combined or subdivided. In the following description, for purposes of explanation, numerous specific details are set forth to provide a thorough understanding of example embodiments. It will be evident to one skilled in the art, however, that the present subject matter may be practiced without these specific details.

[0020] "Visual gestures" in a device allow a user to select and activate features in a display of the device without the user having to use his hands to tap on a display of the device. For example, the user makes a "visual gesture" by physically moving and reorienting the device, while the device's camera is displaying real-time images captured from the rear-facing camera of the device. Since the device is overlaying a depicted physical object with a generated virtual object and its features, the physical motions and re-orientations of the device results in a gesture that moves one of the features into the focus area of the display and may result in an action being generated.

[0021] A visual reference on a physical object may be identified. A visualization of a virtual object engaged with a real time image of the physical object is generated in a display of a device. The virtual object may be based on the visual reference. A rendering of the visualization of the virtual object may be based a position of the display relative to the visual reference. A focus area in the display and a feature of the virtual object are determined. A state of the feature is changed when the feature is in the focus area of the display.

[0022] FIG. 1 is a block diagram illustrating a device 100 suitable for enabling selection of content based on visual gestures on the device, according to some example embodiments. The device 100 may include sensors 102, a display 104, a processor 106, and a storage device 108. For example, the device 100 may be a desktop computer, a vehicle computer, a tablet computer, a navigational device, a portable media device, or a smart phone of a user. The user may be a human user (e.g., a human being), a machine user (e.g., a computer configured by a software program to interact